WHAT IS CLAIMED IS:

1. A cell core transformer having significantly reduced leakage inductance between the primary and secondary windings, said transformer having a substantially flat surface and circuit components associated with said transformer mounted directly onto said flat surface comprising:

a. a slab of ferromagnetic magnetic material having a series of rows and columns of spaced via holes therethrough;

b. a first primary conductor extending through a first one of said via holes formed in said slab of ferromagnetic material for carrying current to create a magnetic field within a portion of the ferromagnetic material proximally encompassing said via hole;

c. a second primary conductor extending through a second one of said via holes formed in said slab of ferromagnetic material, said second via hole being adjacent to said first via hole;

d. said first and second primary conductors coupled together so that the direction of current flowing in said first via is opposite to the direction of current flow in said second via whereby resulting flux generated between said first and second via has the same orientation where the two adjoining magnetic fields intersect;

e. a first secondary conductor in said slab of ferromagnetic material extending through the same via hole as said first primary conductor, whereby a voltage is induced in said first secondary conductor by the magnetic flux produced by current flowing in said first primary conductor;

f. a second secondary conductor extending through the same via hole in said slab of ferromagnetic material as said second primary conductor, whereby a voltage is induced in said second secondary conductor by the magnetic flux produced by current flowing in said second primary conductor;

g. said primary conductors coupled together and said secondary conductors coupled together to provide a desired turns ratio for said cell transformer; and

h. electrical printed circuits formed on top and bottom surfaces of the slab having circuits in electrical contact with said first and second primary conductors and said first and second secondary conductors.

2. A cell core transformer having a substantially flat surface and circuit components associated with said transformer mounted directly onto said flat surface comprising:

a. a slab of ferromagnetic magnetic material having a series of spaced via holes therethrough;

b. a plurality of primary conductors respectively extending through said via holes so that current through said conductors creates a plurality of respective magnetic fields within a portion of the ferromagnetic material proximally encompassing said via holes;

c. a plurality of secondary conductors respectively extending through the same holes as via holes in which said primary conductors extend;

d. said primary conductors coupled together and said secondary conductors coupled together to provide a desired turns ratio for said cell transformer; and

e. electrical printed circuits formed on top and bottom surfaces of the slab having circuits in electrical contract with said primary and secondary conductors.

3. The cell core transformer according to claim 2 wherein said plurality of primary conductors are coupled together so that current flow through any via is opposite to the current flow through its adjacent vias whereby the resulting flux generated between proximate vias has the same orientation where adjoining magnetic fields intersect.

4. The cell core transformer according to claim 2 wherein said plurality of secondary conductors are coupled in series.

5. The cell core transformer according to claim 2 wherein said plurality of secondary conductors are coupled in parallel.

6. The cell core transformer according to claim 2 having x+y secondary conductors, x number of said secondary conductors being coupled in series and y number of

conductor are coupled in series, said series connected x conductors and said series connected y conductors being coupled together in parallel to provide a step-down transformer.

7. The cell core transformer according to claim 2 having b+c primary conductors and x+y secondary conductors, b number of said primary conductors being coupled in series, and said c number of said primary conductors being coupled in series;

said series connected b conductors and said series connected c being conductors coupled in parallel;

x number of secondary conductors being coupled in series, said y number of secondary conductors being coupled in series;

said series connected x conductors and said series connected y conductors coupled in parallel to provide a selected turns-ratio transformer.

8. A method for making a cell core transformer having an efficient flux path with reduced losses comprising:

forming a plurality of vias through a substantially planar ferromagnetic material,

forming corresponding vias in a top PCB and a bottom PCB and one or more vias outside said ferromagnetic material;

forming primary conductors through each of said vias extending through said ferromagnetic material;

forming secondary conductors, insulated from said primary conductors, through each of said vias extending through said ferromagnetic material so that each via and the portion of the ferromagnetic material proximate thereto functions as a 1:1 turns ratio transformer;

forming PCB circuits in said top PCB and said bottom PCB to connect said primary and said secondary conductors in parallel or serial circuits determined by the desired turns ratio of the cell core transformer;

forming electrical conductors through one or more of said vias outside said ferromagnetic material to connect circuits on said top and bottom PCB's; and

laminating said planar ferromagnetic material between said top PCB and said bottom PCB.

9. A method for making a cell core transformer having an efficient flux path with reduced losses comprising:

forming a plurality of vias through a substantially planar ferromagnetic material;

forming corresponding vias in flex circuits and one or more vias outside said ferromagnetic material;

forming a primary conductor through each of said vias extending through said ferromagnetic material;

forming secondary conductors, insulated from said primary conductors, through each of said vias extending through said ferromagnetic material so that each via and the portion of the ferromagnetic material proximate thereto functions as a 1:1 turns ratio transformer; and

forming circuits in said flex material to connect said primary and said secondary conductor in parallel or serial circuits determined by the desired turns ratio of the cell core transformer.

10. A method for making a cell core transformer having an efficient flux path with reduced losses comprising:

forming a plurality of vias through a substantially planar ferromagnetic material;

forming a primary conductor through each of said vias extending through said ferromagnetic material;

forming secondary conductors, insulated from said primary conductors, through said vias extending through said ferromagnetic material so that each via and the portion of the ferromagnetic material proximate thereto operates as a 1:1 turning ratio transformer;

forming circuits to connect said primary and said secondary conductors in parallel or serial circuits determined by the desired turns ratio of the cell core transformer.

11. A cell core transformer having a substantially flat surface and circuit components associated with said transformer mounted directly on to said flat surface comprising:

a. a slab of magnetic material having a series of spaced holes therethrough;

b. a first conductor passing through one of said holes;

c. a second conductor passing through said holes, the second conductor being electrically insulated from the first conductor; and

d. electrical printed circuits formed on top and bottom surfaces of the slab, the printed circuits in electrical contact with the first and second conductors.

12. A cell core transformer:

a. a member including a magnetic material, having a series of spaced holes through at least a portion of said magnetic material;

b. a first conductor passing through one of said holes;

c. a second conductor passing through said same holes, the second conductor being electrically insulated from the first conductor; and

d. electrical printed circuits formed on top and bottom surfaces of the slab, the printed circuits in electrical contact with the first and second conductors.